United States Environmental Protection Agency
Region V
POLLUTION REPORT

Date: Tuesday, September 28, 2010
From: Sam Borries, OSC

To: Michael Chezik, U.S. DOI
Todd Goeks, NOAA
Sharon Hanshue, MDNR
David Chung, U.S. EPA
Lisa Williams, FWS
Thomas Crosetto, EPA

Subject: Plainwell No. 2 Dam
Plainwell, MI
Latitude: 42.4279865
Longitude: -85.6292009

POLREP No.:	6	**Site #:**	059B
Reporting Period:	7/3/10 - 8/28/10	**D.O. #:**	
Start Date:	8/5/2009	**Response Authority:**	CERCLA
Mob Date:	8/5/2009	**Response Type:**	Time-Critical
Demob Date:		**NPL Status:**	NPL
Completion Date:		**Incident Category:**	Removal Action
CERCLIS ID #:		**Contract #**	
RCRIS ID #:			

Site Description
Former industrial and waste water treatment practices, that took place from approximately the 1950s to the mid-1970s, released polychlorinated biphenyls (PCBs) into the Kalamazoo River in southwest Michigan. At least one source of the PCBs was the waste water released from the paper mills operating in the Kalamazoo, Michigan area; specifically, from the processing and de-inking of carbonless copy paper containing PCBs. These paper mills released PCBs into the Kalamazoo River system, some of which deposited in the area of the river known as the Plainwell Impoundment (which was created as a result of the building of a hydroelectric dam on the Kalamazoo River in the early 1900s).

Beginning in 2007 and continuing through 2008, investigations in Area 1 of the Kalamazoo River OU, including Plainwell Dam #2, were conducted as part of the Supplemental Remedial Investigation/Feasibility Study (SRI/FS). Phase 1 of that work involved the delineation of frequently inundated areas of the floodplain upstream of Plainwell Dam #2. Phase 2 of the investigation involved the sampling of Plainwell Dam #2. Results of the Phase 2 investigation of Plainwell Dam #2 found elevated levels of PCBs in bank and floodplain soils and, to a limited extent, in in-stream river sediments. Samples were collected at 94 locations from a uniform grid in the floodplain, including in-stream islands. A total of 302 individual samples were collected from the floodplain, with total PCB concentrations ranging from non-detect to 60 milligrams per kilogram (mg/kg). Bank soil samples were

collected from 78 locations. A total of 265 samples were analyzed for PCBs, with total PCB concentrations ranging from non-detect to 45 mg/kg. River sediment samples were collected from 60 locations, resulting in 267 samples analyzed for PCBs. PCB concentrations in the river sediment ranged from non-detect to 100 mg/kg. A summary of the investigation results is presented in the Plainwell No. 2 Conceptual Design Report.

On December 10 and 11, 2008, MDEQ collected 30 river floodplain soil cores and 18 bank cores. A total of 50 individual river sediment and 25 soil samples were analyzed for PCBs. Total PCB concentrations in the river sediment ranged from non-detect to 80.2 mg/kg. Total PCB concentrations in soil ranged from non-detect to 80.5 mg/kg.

The Allied Paper Inc./Portage Creek/Kalamazoo River Superfund Site (Site) encompasses the Kalamazoo River from Morrow Dam to Lake Michigan and approximately 3 miles of Portage Creek to the Kalamazoo River. The Plainwell Dam #2 (Site) is located approximately 3.5 miles upstream of the former Plainwell Dam in the Township of Gun Plain, T 1N, R 11 W, in portions of Sections 32 and 33 upstream to the Penn Central Railroad Bridge.

On June 8, 2009, an Administrative Order on Consent (AOC) was entered into between U.S. EPA and Georgia-Pacific, LLC, whereby, Georgia-Pacific agreed to conduct a time-critical removal action at the Site. The response actions include dredging and/or excavation of river sediment, riverbank soils and floodplain soil, containment, monitoring, water treatment, stabilization, and the off-Site disposal of excavated material in accordance with federal PCB regulations at 40 C.F.R. § 761.61. The response activities will require approximately 200 on-Site working days to complete, and will result in the removal of approximately 12,000 cubic yards of waste material, containing approximately 89% of the PCBs in the Plainwell Dam #2.

Additional site description and history can be found in the July 2009 Plainwell No. 2 Dam Area Time-Critical Removal Action Design Report, the June 8, 2009, Administrative Settlement Agreement and Order on Consent for Removal Action, the June 8, 2009, Time-Critical Removal Action Memorandum, and other Administrative Record documents.

Current Activities

During the week ending July 10, 2010, Terra began installing turbidity curtains in Areas 4B and 5B; began restoring Island 2 by placing river run rock along the northeastern corner of the island; completed the removal of the access road that extended from the small island to Island 2; and began to excavate riverbank soil from Area 3B.

Terra shipped a total of fifteen loads (720.93 tons) of non-TSCA-level soil to the C&C Landfill in Marshall, MI.

JFNew began restoration activities on Island 2 by placing biologs and seed mats in the grids that Arcadis cleared and Terra backfilled.

Arcadis collected two water samples from the Kalamazoo River (TS30160 and TS30161) and one rinsate sample (TS30162). The analytical results for these samples were non-detect for

PCB content.

Arcadis monitored turbidity on July 9, 2010. All downstream turbidity readings were less than twice the upstream turbidity readings.

During the week ending July 17, 2010, Terra continued the installation of turbidity curtains in Areas 4B and 5B; continued the restoration of Island 2 (e.g., access road removal and topsoil placement); continued excavating soil from Area 3B; extended the access road, in the oxbow excavation area, in order to allow for the excavation of soil from this area; and delineated the perimeter of the upland portion of Area 5B.

Terra shipped a total of seventeen loads (797.32 tons) of non-TSCA-level soil to the C&C Landfill in Marshall, MI.

JFNew continued the restoration activities on Island 2 by placing biologs and seed mats in the grids that Arcadis cleared and Terra backfilled.

Arcadis collected fourteen soil samples from Area 3B (TS20375 through TS20389), and split one of these samples, TS20385, with START (Note: the START-designated name of its sample is PD2-071610-11-SD/TS20385 and PD2-071610-11-SD-DP/TS20385); one soil sample from Island 2 (TS20390); five water samples from the water treatment system located at Staging Area 1 (W_SA1_In_005, W_SA1_RM_005, W_SA1_LM_005, W_SA1_RE_005, and W_SA1_LE_005); two surface water samples from the Kalamazoo River (TS30163 through TS30165); and one rinsate sample (TS30166). The analytical results for these samples were either below the cleanup criteria for PCBs (i.e., 5.0 mg/kg) or were non-detect for PCB content.

Arcadis also monitored the turbidity of the river on July 14, 15, and 17, 2010. All downstream turbidity readings were less than twice the upstream turbidity readings.

During the week ending July 24, 2010, Terra cleared the grass from the upland portion of Area 5B in order to delineate the area that required excavation; began excavating soil from Area 4B; completed the restoration of the last grid on Island 2; began restoring Area 3B; and began and completed the dismantling and decontamination of the pontoon bridge.

Terra shipped a total of 27 loads (1,256.56 tons) of non-TSCA-level soil to the C&C Landfill in Marshall, MI.

JFNew continued working on the restoration of Island 2.

Arcadis collected eleven soil samples from Area 4B (TS20391 through TS20401), and split one of these samples, TS20397, with START (Note: the START-designated name of its sample is PD2-072210-12-SD/TS20397); five water samples from the water treatment system located at Staging Area 1 (W_SA1_In_006, W_SA1_RM_006, W_SA1_LM_ 006, W_SA1_RE_006, and W_SA1_LE_006); two water samples from the Kalamazoo River (TS30167 and TS30168); and one rinsate sample (TS30169). The analytical results for these

samples, with the exception of Sample TS20394, which had an analytical result of 27.7 mg/kg, were either below the cleanup criteria for PCBs (i.e., 5.0 mg/kg) or were non-detect for PCB content. Note: After an additional six-inch excavation from Grid 4 of Area 4B, the follow-up sample for Sample TS20394 (TS20402) was 1.494 mg/kg.

Arcadis also monitored turbidity on July 19, 20, and 22, 2010. All turbidity readings, 300 feet downriver of the excavation areas, were less than twice the upstream turbidity readings.

During the week ending July 31, 2010, Terra treated water in the water treatment system located at Staging Area 1; and hauled soil to both the C&C Landfill in Marshall, MI and the Ottawa Farms Landfill in Coopersville, MI. Note: Due to elevated water levels that existed from July 26 to July 31, 2010, no soil excavation or restoration activities took place at the site.

Terra shipped a total of four loads (193.91 tons) of non-TSCA-level soil to the C&C Landfill in Marshall, MI and four loads (203.85 tons) of non-TSCA level soil to the Ottawa Farms Landfill in Coopersville, MI.

Arcadis collected a total of eleven water samples from the water treatment system located at Staging Area 1 (W_SA1_In_007, W_SA1_RM_007, W_SA1_LM_007, W_SA1_RE_ 007, W_SA1_LE_007, W_SA1_DUP_004, W_SA1_In_008, W_SA1_RM_008, W_SA1_LM_008, W_SA1_RE_008, and W_SA1_LE_008), and split one of these samples, W_SA1_RE_007, with START (Note: the START-designated name of its sample is PD2-072810-02-WT/W_SA1_RE_007); two water samples from the Kalamazoo River (TS30170 and TS30171), and one rinsate sample (TS30172). The analytical results for these samples were non-detect for PCB content.

During the week ending August 7, 2010, Terra continued to excavate soil and remove tree stumps from Area 5B; loaded soil into dumptrucks at Staging Area 2; began to excavate soil from Cells #1 and #2 of the oxbow; placed topsoil in Areas 3B and 4B; and constructed a three-sided containment area, on the Staging Area 1 pad, where Terra staged the soil excavated from the oxbow.

Terra shipped a total of fourteen loads (676.83 tons) of non-TSCA-level soil to the C&C Landfill in Marshall, MI and four loads (195.59 tons) of non-TSCA level soil to the Ottawa Farms Landfill in Coopersville, MI.

Arcadis collected one soil sample from Area 4B (TS20402); five soil samples from Area 5B (TS20403 through TS20407), and split one of these samples, TS20404, with START (Note: the START-designated name of its sample is PD2-080510-13-SD/TS20404); two soil samples from the oxbow, Grids 1 and 2 (TS20408 and TS20409); five water samples from the water treatment system located at Staging Area 1 (W_SA1_In_009, W_SA1_RM_009, W_SA1_LM_009, W_SA1_RE_009, and W_SA1_LE_009); two water samples from the

Kalamazoo River (TS30173 and TS30174); and one rinsate sample (TS30175). The analytical results for these samples, with the exception of Sample TS20408, which had an analytical result of 1.5 mg/kg, were either below the cleanup criteria for PCBs (i.e., 1.0 mg/kg for the first six-inch excavation in the oxbow or 5.0 mg/kg for the removal areas outside of the oxbow) or were non-detect for PCB content. Note: After an additional six-inch excavation from Grid 2 of the oxbow, the follow-up sample for Sample TS20408 (TS20410) was 0.65 mg/kg.

Arcadis also monitored turbidity on August 2 and 4, 2010. All turbidity readings, 300 feet downriver of the excavation areas, were less than twice the upstream turbidity readings. During the week ending August 14, 2010, Terra continued restoration activities in Area 3B by placing and grading topsoil in the area; continued to excavate riverbank soil from Area 5B and the upland section of this area; began grading topsoil in Area 4B; began and completed the removal of the turbidity curtain from Area 3B and the deployment of this curtain in Area 6; began the removal of a finger road in the oxbow area; began and completed the re-excavation of Cell #2 of the oxbow; began the re-excavation of Cell #3 of the oxbow; began and completed the expansion of Staging Area 1 to include a truck turn-around area; and began pugging activities at Staging Area 1 in order to dry the soil prior to its shipment to the landfill.

Terra shipped one load (54.57 tons) of non-TSCA-level soil to the C&C Landfill in Marshall, MI and twelve loads (603.65 tons) of non-TSCA level soil to the Ottawa Farms Landfill in Coopersville, MI.

JFNew installed biologs along the riverbanks of Areas 3B and 4B.

Arcadis collected seven soil samples from the oxbow (TS20410 through TS20412, TS20417, TS20418, TS20423, and TS20424); four soil samples from Area 5B (TS20413 through TS20416); four soil samples from the upland section of Area 5B (TS20419 through TS20422) and split one of these samples, TS20419, with START (Note: the START-designated name of its sample is PD2-081310-14-SD/TS20419); two water samples from the Kalamazoo River (TS30176 and TS30177); and one rinsate sample (TS30178). The analytical results for these samples, with the exception of Samples TS20411 (2.3 mg/kg (first oxbow excavation)), TS20412 (3.1 mg/kg (first oxbow excavation)), TS20413 (7.57 mg/kg), TS20415 (17.4 mg/kg), TS20423 (2.1 mg/kg (first oxbow excavation)), and TS20424 (1.4 mg/kg (first oxbow excavation)), were either below the cleanup criteria for PCBs (i.e., 1.0 mg/kg for the first six-inch excavation in the oxbow or 5.0 mg/kg for the removal areas outside of the oxbow) or were non-detect for PCB content.

After Terra excavated an additional six inches of soil from the grids that encompassed Samples TS20411, TS20412, TS20423, and TS20424, the follow-up samples for these grids (i.e., TS20417, TS20418, TS20425, and TS20426) had a PCB content below the cleanup criteria for PCBs (i.e., 5.0 mg/kg for the second six-inch excavation in the oxbow and 5.0 mg/kg for the removal areas outside of the oxbow).

After Terra excavated an additional twelve inches of soil from the grids that encompassed

Samples TS20413 and TS20415, the follow-up samples for these grids (i.e., TS20451 and TS20452) had a PCB content below the cleanup criteria for PCBs (i.e., 5.0 mg/kg for the removal areas outside of the oxbow).

Arcadis also monitored turbidity on August 10 and 11, 2010. All downstream turbidity readings were less than twice the upstream turbidity readings.

During the week ending August 21, 2010, Terra continued pugging operations at Staging Area 1; continued the excavation of riverbank soil from the upland section of Area 5B; continued the re-excavation of Cell #3 of the oxbow; began the excavation of Cell #4 of the oxbow; began the deployment of turbidity curtain sections in Area 6; loaded cal-cement into the silos located at Staging Areas 1 and 2; began and completed the removal of the turbidity curtain sections from Area 4B; began the spreading of topsoil in Area 4B; and began the re-excavation of the failed grids in Cell #4 of the oxbow.

Terra shipped a total of 26 loads (1,147.01 tons) of non-TSCA-level soil to the C&C Landfill in Marshall, MI.

JFNew installed biologs along the riverbank of Area 5B.

Arcadis collected six soil samples from the oxbow (TS20425 and TS20426 and TS20429 through TS20432) and split one of these samples, TS20425, with START (Note: the START-designated name of its sample is PD2-081710-15-SD/TS20425); two soil samples from Area 5B (TS20427 and TS20428); five water samples from the water treatment system located on Staging Area 1 (W_SA1_In_010, W_SA1_RM_010, W_SA1_LM_010, W_SA1_RE_010, and W_SA1_LE_010); two water samples from the Kalamazoo River (TS30179 and TS30180); and one rinsate sample (TS30181). The analytical results for these samples, with the exception of Samples TS20427 (8.4 mg/kg), TS20428 (5.5 mg/kg), TS20429 (4.2 mg/kg (first oxbow excavation)), TS20430 (7.5 mg/kg (first oxbow excavation)); and TS20432 (3.4 mg/kg (first oxbow excavation)), were either below the cleanup criteria for PCBs (i.e., 1.0 mg/kg for the first six-inch excavation in the oxbow or 5.0 mg/kg for the removal areas outside of the oxbow) or were non-detect for PCB content.

After Terra excavated an additional six inches of soil from the grids that encompassed Samples TS20427, TS20428, and TS20432, the follow-up samples for these grids (i.e., TS20451, TS20452, and TS20435) had a PCB content below the cleanup criteria for PCBs (i.e., 5.0 mg/kg for the second six-inch excavation in the oxbow and 5.0 mg/kg for the removal areas outside of the oxbow).

After Terra excavated an additional twelve inches of soil from the grids that encompassed Samples TS20429 and TS20430, the follow-up samples for these grids (i.e., TS20444 and TS20445) had a PCB content below the cleanup criteria for PCBs (i.e., 5.0 mg/kg for the second six-inch excavation in the oxbow).

Arcadis monitored turbidity on August 18, 2010. All turbidity readings, 300 feet downriver of the excavations areas, were less than twice the upstream turbidity readings.

During the week ending August 28, 2010, Terra continued pugging operations at Staging Areas 1 and 2; began the excavation of Cell #5 in the oxbow; began the excavation of riverbank soil from Area 6 after deploying turbidity curtains along the riverbank perimeter of the area; continued to load-out dumptrucks that transported soil to the landfill; and re-excavated failed grids in Area 5B and in the oxbow.

Terra shipped six loads (311.51 tons) of non-TSCA-level soil to the C&C Landfill in Marshall, MI and 26 loads (1,262.21 tons) of non-TSCA level soil to the Ottawa Farms Landfill in Coopersville, MI.

JF New installed seed mats in Area 4B and began to install biologs in Area 5B.
Arcadis collected thirteen soil samples from the oxbow (TS20433 through TS20435, TS20444 through TS20450, and TS20453 through TS20455); ten soil samples from Area 5B (TS20436 through TS20443 and TS20451 and TS20452); six water samples from the water treatment system located on Staging Area 1 (W_SA1_In_011, W_SA1_RM_011, W_SA1_LM_011, W_SA1_RE_011, W_SA1_LE_011 and W_SA1_DUP_005); two water samples from the Kalamazoo River (TS30182 and TS30183); and one rinsate sample (TS30184). Arcadis also split Sample TS20436 and TS20445 with START. The START-designated names for its samples are PD2-082610-16-SD/TS20436 and PD2-082610-17-SD/TS20445. With the exception of Samples TS20433 (7.2 mg/kg), TS20434 (7.8 mg/kg), TS20441 (8.42 mg/kg), TS20442, a duplicate of TS20441 (8.71 mg/kg), TS20446 (18.0 mg/kg), and TS20453 (1.6 mg/kg, first oxbow excavation), the remaining samples were below the cleanup criteria for PCBs (i.e., 1.0 mg/kg for the first six-inch excavation in the oxbow or 5.0 mg/kg for the removal areas outside the oxbow).

After Terra excavated an additional six inches of soil from the grids encompassing Samples TS20433, TS20434, TS20441, TS20442, and TS20446, the follow-up samples for these grids (i.e., TS20444, TS20445, TS20477 (followup sample for TS20441 and TS20442), and TS20454) had a PCB content below 5.0 mg/kg for the second six-inch excavation in the oxbow and 5.0 mg/kg for the removal areas outside of the oxbow.

After Terra excavated an additional twelve inches of soil from the grid encompassing Sample TS20453, the final follow-up sample (i.e., TS20478) had a PCB content below 5.0 mg/kg for the second six-inch excavation in the oxbow.

Arcadis also monitored the turbidity of the river on August 24 through 28, 2010. All turbidity readings, 300 feet downriver of the excavation areas, were less than twice the upstream turbidity readings.

Approximatley 9,485 cubic yards of non-TSCA soil has been shipped off-site to date in 2010.

Planned Removal Actions
See Pollution Report #1.

Next Steps

(1) Complete the excavation of the upland section of Area 5B and the oxbow access road.
(2) Complete the restoration of Area 6, the oxbow, and Area 5B.
(3) Begin and complete the removal of the privately owned site access roads and Staging Areas 1 and 2.
(4) Complete restoration activities.

Key Issues
The progress of excavation and restoration activity is based on weather conditions.

Estimated Costs *

	Budgeted	Total To Date	Remaining	% Remaining
Extramural Costs				
TAT/START	$155,000.00	$126,029.00	$28,971.00	18.69%
Intramural Costs				
Total Site Costs	$155,000.00	$126,029.00	$28,971.00	18.69%

* The above accounting of expenditures is an estimate based on figures known to the OSC at the time this report was written. The OSC does not necessarily receive specific figures on final payments made to any contractor(s). Other financial data which the OSC must rely upon may not be entirely up-to-date. The cost accounting provided in this report does not necessarily represent an exact monetary figure which the government may include in any claim for cost recovery.

www.epaosc.org/PlainwellNo2Dam